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forms, studying their morphological characters, and testing their relative value by parallel cultures. During the last five years the successive generations of these segregated pure races have been followed, with the result that a considerable number of mutants have been found and tested. In both papers DeVries compares Nilsson's pedigree-culture method with the older and still almost universal method of selection in which the undesirable individuals are destroyed and all the best are saved and sown together. He concludes that Rimpau could have produced the Schlanstedt barley, for which he is so widely celebrated, in four or five years by the Svalöf method, instead of having to devote to it the 20–25 years required by the older method. The magnitude and quickness of the results at Svalöf, where alone the conception of constant elementary forms has been adopted as the basic principle, indicates the importance of the newer conceptions of evolution for scientific agriculture, and these papers of DeVries bring to the notice of the non-Swedish world methods which will doubtless lead to most important changes in the conduct of the various agricultural stations.—Geo. H. Shull.

Report to Evolution Committee.—In a third report to the Evolution Committee of the Royal Society, Bateson, Saunders, and Punnett[24] have shown that practically all the complexities encountered in their study of hybrid stocks, sweet peas, and poultry are in essential accord with Mendelian expectation if the assumption is made that what appears externally as a single character may be in reality dependent for its appearance upon the presence of two or more independent allelomorphs or internal units. In some cases the nature of these internal units is apparent, as when the presence of one always changes a pigment from red to blue; but in other cases there is no clue to the nature of the individual allelomorph, as when the combination of two white sweet peas invariably produce colored offspring owing to the bringing together of two allelomorphs the combined action of which is necessary to the production of color. In stocks the presence of hoary pubescence is shown to depend upon the simultaneous presence of four independent allelomorphs, two of which are also necessary to the production of colored flowers. At the New Orleans meeting of the Botanical Society of America (December 1905) the reviewer presented a paper on the "Latent characters of a white bean," in which it was shown that the color of purple mottled beans obtained as an F_1 from a cross between yellow and white is dependent upon the simultaneous presence of three distinct allelomorphs. In that paper it was predicted that Bateson's results on stocks and sweet peas would find a satisfactory explanation on the same grounds without the assumption of complex and inexplicable synthesis and resolution of "hypallelomorphs" as attempted in the earlier Reports to the Evolution Committee. The completeness with which the new point of view is demonstrated by these further investigations will do much to strengthen the view that Mendelian behavior is a more common phenomenon than previous observations would have indicated. Although stocks behave in a rather simple way when the analysis given by the authors is comprehended, the recombination of the allelomorphs that have been discovered in this plant yields in the second generation 243 distinct types, and it is plain that in still more complex cases a perfectly typical Mendelian behavior would easily exceed the keenest human power of analysis to unravel.—GEO. H. SHULL.

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[24] Bateson, W., Saunders, Miss E. R., Punnett, R. C., Reports to the Evolution Committee. III. pp. 52. London: Harrison & Sons. 1906.

Sterilized soil.—SCHULZE finds[25] that plants grown in sterilized soil are affected by two opposing factors· (1) the formation of more or less injurious decomposition products in the sterilizing process, which act upon the plants "according to the degree of their sensitiveness" (this phrase obviously hides ignorance of other factors); (2) an advantageous release of nutritive materials, especially of the otherwise unavailable nitrogen. According as one or the other of these factors prevails the crop is increased or diminished by sterilizing the soil. But even when the crop is diminished the N-content may be markedly increased. By the addition of lime the injurious effect of the decomposition products may be almost or wholly counteracted. The significance of these researches for pot-cultures in sterilized soil is obvious, invalidating many conclusions based upon such experiments when this factor had not been considered.—C. R. B.

Moss rhizoids.—KURT SCHOENE finds[26] that rhizoids rarely arise from the germinating spores of any mosses except Funaria, in which they regularly appear. Lack of nitrogen suppresses the chloronema of Funaria, reducing it much in others; and lack of either nitrates or phosphates enormously lengthens the rhizoids of Funaria. These peculiarities of spore germination mark Funaria as a ruderal plant. The rhizoids show a gradation in their significance as organs of food supply, diminishing from the forms with a central strand to those without it, this function entirely disappearing in water forms. (The experiments on which this statement rests are too few and inconclusive to be convincing.) The oblique position of partitions is held to be a mechanical arrangment for resisting longitudinal strains and too great deformation of plasma on bending. It is not obvious that in nature such dangers often threaten.—C. R. B.

Items of taxonomic interest.—OAKES AMES (Proc. Biol. Soc. Washington **19**:143–154. 1906) has described 18 new species of Acoridium (Orchidaceae) from the Philippines.—R. SCHLECHTER (Bull. Herb. Boiss. II. **6**:843. 1906), in Loesener's *Plantae Selerianae*, has described a new genus (*Labidostelma*) of Asclepiadaceae from Guatemala.—C. B. CLARKE (Kew Bull. 1906:251) has published a new African genus (*Crossandrella*) of Acanthaceae.—A. D. E. ELMER (Leaflets on Philipp. Bot. **1**:42–73. 1906) has published new Philippine species under Pandanus (2), Ficus (8), and the Rubiaceae (14).—J. M. C.

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[25] SCHULZE, C., Einige Beobachtungen über die Einwirkung der Bodensterilisation auf die Entwickelung der Pflanzen. Landw. Versuchs-Stat. **65**:137–147. 1906.

[26] SCHOENE, KURT, Beiträge zur Kenntnis der Keimung der Laubmoossporen und zur Biologie der Laubmoosrhizoiden. Flora **96**:276–321. 1906.